

CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. **(Currently Amended)** A method for fabricating an intensity balanced photomask, the method comprising:
forming an alternating aperture phase shifting photomask pattern on a substrate having trenches formed therein; and
forming a layer of antireflective material within the bottom of at least one trench, the antireflective material substantially transparent to at least one wavelength.
2. **(Currently Amended)** The method of Claim 1 wherein the antireflective material further comprises Magnesium Fluoride (~~MgF2~~) (MgF₂).
3. **(Original)** The method of Claim 1 further comprising forming a layer of antireflective material within the bottom of a plurality of the trenches.
4. **(Original)** The method of Claim 1 further comprising forming the layer of antireflective material using a vacuum evaporation technique.
5. **(Original)** The method of Claim 1 further comprising selecting the depth of the antireflective layer to increase light coupling into the trench.
6. **(Original)** The method of Claim 1 further comprising:
selecting a light source having a wavelength for use with the photomask; and
selecting an AR layer thickness of approximately the wavelength divided by four times the refractive index of the antireflective material.

7. (Original) The method of Claim 6 further comprising selecting an AR layer thickness equal to the wavelength divided by four times the refractive index of the antireflective material.

8. (Original) The method of Claim 1 further comprising the substrate formed from quartz.

9. (Currently Amended) The method of Claim 1 further comprising depositing an absorber layer on the alternating aperture phase shifting photomask pattern.

10. (Original) The method of Claim 1 further comprising depositing a protective layer over the photomask to prevent electrostatic discharge.

11. (Currently Amended) A method for fabricating a phase shifting mask, the method comprising:

providing an etched transparent substrate having a recessed transmissive area, the substrate having a first refractive index;

depositing a transparent antireflective layer in the recessed transmissive area, the antireflective layer having a second refractive index less than the first refractive index;

depositing an absorber layer on the etched substrate; and

patterning the absorber layer.

12. (Original) The method of Claim 11, wherein the antireflective layer has a thickness of approximately one-quarter of a wavelength of incident light.

13. (Currently Amended) The method of Claim 11, wherein the antireflective material layer comprises Magnesium Fluoride (~~MgF2~~) (MgF₂).

14. (Currently Amended) An alternating aperture phase shifting photomask, comprising:

an etched transparent substrate including a recessed transmissive portion;
an antireflective layer deposited on a bottom surface of the recessed transmissive portion, **the antireflective layer substantially transparent to at least one wavelength**; and
a patterned absorber layer deposited on the substrate.

15. (Currently Amended) The ~~photomask~~ **phase shifting mask** of Claim 14 further comprising the antireflective layer having a thickness of approximately one-quarter wavelength of incident light.

16. (Currently Amended) The ~~photomask~~ **phase shifting mask** of Claim 14 further comprising the antireflective layer having a thickness of approximately the wavelength of incident light divided by four times the refractive index of the antireflective ~~material~~ **layer**.

17. (Original) The phase shifting mask of Claim 14, wherein the substrate has a first refractive index and the antireflective layer has a second refractive index less than the first refractive index.

18. (Currently Amended) The phase shifting mask of Claim 14, wherein the antireflective ~~material~~ **layer** comprises Magnesium Fluoride (~~MgF2~~) (**MgF₂**).

19. (Currently Amended) The phase shifting mask of Claim 14 further comprising the antireflective ~~material~~ **layer** deposited using a directional technique.

20. (Currently Amended) The phase shifting mask of Claim 14 further comprising the antireflective ~~material~~ **layer** deposited using a vacuum evaporation technique.